

## CSC 493 Senior Projects

### R4: Weekly Report 4 with Design and the Architectural Model

#### *On the structure, format, and purpose of the weekly reports*

Be sure you have read [http://faculty.berea.edu/pearcej/csc493/R\\_OnReports.pdf](http://faculty.berea.edu/pearcej/csc493/R_OnReports.pdf) because you will be expected to follow the guidelines stated there for each weekly report. In particular, each weekly report must be formatted as described there and must include the cover page, the Application Development section, and the Executive section as described there.

#### *Summary of the task for inclusion in the Application Development Section*

This week's new work will move from the planning and analysis phase to the design phase of the software project.

It is well understood by strong software developers that the functional elements of a program should not ever be allowed to become too large. If any component of a program grows beyond the size where it's readily comprehensible as a unit, it can too easily conceal errors. Thus, any software with large components is likely to be harder to read, harder to test, and harder to debug. The design process clarifies exactly how the developer plans to implement the design specifications, ie how the software is to be written, and with which small components. In particular, the main work of this first part of the design phase is to present an architectural model of the software components.

#### *Application Development Section of the Report:*

The Application Section of the report should be divided into the following sections, revising only as needed and clearly indicating any revisions with what was changed and when it was changed.

- **The Project Concept Proposal** (indicate and date all updates)
- **Inspiration** (indicate and date all updates)
- **Vision and Scope** (indicate and date all updates)
- **Software Requirements Specifications** (indicate and date all updates)
  
- **System Design and Architecture**
  
- The software architectural model must be:
  - a simplified description of the entire planned project system which abstracts the essentials and ignores the non-essentials;
  - defines the major software components (classes, methods, etc);
  - uses a hierarchical presentation which makes the system simple to understand;
  - shows the flow of control and data through the system;
  - is organized according to consistent conventions;
  - can be used for reasoning about the software system.

Any architectural software model which satisfies the above criteria may be used. Many software developers use schematic designs of the planned software components as part of their modeling description, but this is not required. It is acceptable to list the planned

software components with brief descriptions as long as the control hierarchy and interactions among the components are also made clear.

***Report Format and Submission:***

Convert the file to a pdf, name the file *yourusername-R4.pdf*, and submit into our course management system in time to meet the stated deadline.

Note that the pdf file does not need to be printed, but you will need to retain the electronic copy of the original editable file because you will use it to build your next weekly report.